AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-24. (Cancelled).

25. (Currently amended) A method for detecting and/or measuring the concentration of a substance in a sample obtained from a constituent of a living organism comprising:

obtaining a sample from a living organism containing a substance to be detected and/or its concentration to be measured,

in a sample preparation step, mixing and reacting the substance in the sample with a measurement reagent to produce a reaction product in the sample, without producing hydrogen peroxide, having an absorption peak at a wavelength different from that of the absorption peak of the substance and in an amount corresponding to that of the substance,

in a photothermal converting detection step, irradiating the sample containing the reaction product with an excitation light, the reaction product being water-soluble, and the absorbance of the reaction product in a wavelength range of the excitation light being sufficient to cause a temperature change, and

measuring a change in the refractive index of the irradiated sample caused by the change in temperature thereof by passing a probe light through a thermal lens formed by the change in the refractive index and measuring changes in the optical path of the probe light to determine the existence and/or concentration of the substance in

the sample obtained from a constituent of a living organism by using a calibration curve between the concentration of the substance and the refractive index.

26. (Previously presented) The method claim 25, wherein the wavelength of the excitation light is 600 nm or more.

27. (Previously presented) The method of claim 25, wherein the sample preparation step and the photothermal converting detection step are carried out in a capillary of a microchip by charging the microchip including the capillary with the sample obtained from a constituent of a living organism and the measurement reagent.

28. (Previously presented) The method of claim 27, wherein the capillary is formed by bonding together a pair of planar members, at least one of the pair of planar members having a groove on its surface, the pair of the planar members being bonded together so that the surface having the groove faces inside.

29. (Previously presented) The method of claim 25, wherein the sample obtained from a constituent of a living organism is a blood sample, the substance is hemoglobin and in the sample preparation step the blood sample and the measurement reagent are mixed to hemolyze the blood sample.

30. (Previously presented) The method of claim 29, wherein the wavelength of the excitation light is in the range of from 610 to 650 nm and the wavelength of the probe light is longer than that of the excitation light.

31. (Previously presented) The method of claim 30, wherein the wavelength of the excitation light is in the range of from 620 nm to 640 nm.

32. (Previously presented) The method of claim 29, wherein the measurement reagent contains a neutral surfactant in a concentration sufficient to

hemolyze red blood cells, an oxidant in a concentration sufficient to oxidize hemoglobin to give methemoglobin, and a buffer in a concentration sufficient to keep a pH value of the reagent in a range of from 5 to 7.

33. (Previously presented) The method of claim 32, wherein the measurement reagent contains no cyanide.

34. (Previously presented) The method of claim 29, wherein the mixing ratios of the blood sample to the measurement reagent are in a range of from 1:1 to 1:250.

35. (Previously presented) The method of claim 25, wherein the sample obtained from a constituent of a living organism contains phosphatase, and in the sample preparation step the sample obtained from a constituent of a living organism and the measurement reagent are mixed to react the phosphatase in the sample obtained from a constituent of a living organism with a substrate in the measurement reagent.

36. (Previously presented) The method of claim 35, wherein the substrate has a phosphoric ester linkage.

37. (Previously presented) The method of claim 35, wherein the substrate is 5-bromo-4-chloro-34-indoxyl phosphate or a salt thereof.

38. (Previously presented) The method of claim 35, wherein the phosphatase is alkaline phosphatase.

39. (Previously presented) The method of claim 35, wherein the concentration of the substrate in the measurement reagent is in a range of from 1 to 15 mM.

40. (Previously presented) The method of claim 35, wherein the total time from mixing of the sample obtained from a constituent of a living organism with the measurement reagent is in a range of from 3 to 15 minutes.